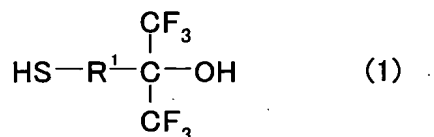


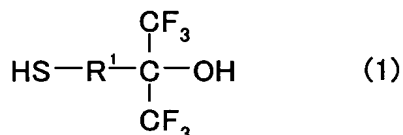
WHAT IS CLAIMED IS:

1. A thiol compound having the structure represented by the formula (1),



5 wherein R^1 is a bivalent substituent selected from linear, branched or cyclic saturated hydrocarbon having 1 to 15 carbon atoms.

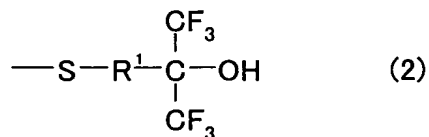
2. A copolymer obtained by using a thiol compound represented by the formula (1);



10

(wherein R^1 is a bivalent substituent selected from linear, branched or cyclic saturated hydrocarbon having 1 to 15 carbon atoms.) as a chain transfer agent, in polymerization of two or more polymerizable compounds having an ethylenic double bond.

15 3. The copolymer according to claim 2 comprising a structure represented by the formula (2);



(wherein R¹ is a bivalent substituent selected from linear, branched or cyclic saturated hydrocarbon having 1 to 15 carbon atoms.) as the end group.

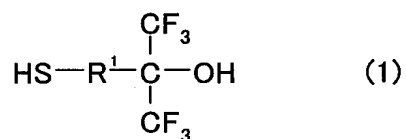
4. The copolymer according to claim 2 used as a coating
5 polymer in semiconductor lithography.

5. The copolymer according to claim 4, which has at least a repeating unit having a structure which is decomposed by an acid to become soluble in an alkali developer and a repeating unit having a polar group to enhance adhesion to a substrate,
10 and which is used as a resist polymer.

6. The copolymer according to claim 4 which is used as an anti-reflective coating polymer coated under the resist film.

7. A method for producing a copolymer comprising step
15 of:

radical copolymerization of two or more polymerizable compounds having an ethylenic double bond wherein a thiol compound represented by the formula(1):



20 (wherein R¹ is a bivalent substituent selected from linear, branched or cyclic saturated hydrocarbon having 1 to 15 carbon atoms.)

is used as a chain transfer agent.